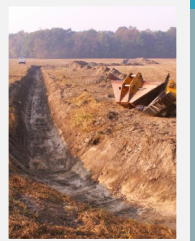




Thank You for Your
Participation!

Delaware Land Restoration Workshop *Share Your Story!*

Wednesday, November 6, 2013



Workshop Goals

- Joining restoration partners across the State to discuss their Best Management Practices, landowner stories, funding sources, and program benefits.
- Providing opportunities to visit several restoration sites to view firsthand how projects are accomplished and impact water quality.
- Implementing and reviewing lessons learned through hands-on projects and discussions.

Please join us by sharing your land restoration stories and learning from others! Participation is important for working together!

Partners in Restoration



Partners in Restoration Contact List

Kevin Ryan
kevin.ryan@de.nacdnet.net
Conservation Planner
Sussex Conservation District

Bart Wilson
science@inlandbays.org
Science Coordinator
Center for Inland Bays

Travis Schirmer
travis.schirmer@state.de.us
EPS II / Project Planner
DNREC Division of Watershed
Stewardship Drainage Program

Michael Yost
michael.yost@state.de.us
Environmental planner
DNREC

Jason Strauss
jason.strauss@state.de.us
EPS III
DNREC

Notes

Partners in Restoration Contact List

Jake McPherson
jmcpherson@ducks.org
Regional Biologist
Ducks Unlimited

Brittany Sturgis
brittany.sturgis@state.de.us
Planner
DNREC, Watershed Assessment &
Management Section

Phil Miller
philip.miller@state.de.us
Marketing Specialist
DNREC

Kelly Valencik
kelly.valencik@state.de.us
Coastal Training Program
Coordinator
Delaware National Estuarine
Research

Tyler Monteith
tyler.monteith@state.de.us
Environmental Scientist I
DNREC

Jennifer Volk
jennvolk@udel.edu
Extension Specialist
UD

Maggie Pletta
margaret.pletta@state.de.us
Outreach Specialist
DNREC

Jennifer Walls
jennifer.walls@state.de.us
Planner
DNREC

Al Rizzo
al_rizzo@fws.gov
Project leader
USFWS

Sharon Webb
Sharon.webb@state.de.us
Environmental Scientist
NPS

Agenda

The morning session features a driving tour of restoration projects throughout Kent County. Impacts and improvements to water quality will be presented. Participants will visit several restoration sites to view first-hand how the projects are accomplished and how they impact water quality.

The afternoon will be spent implementing and reviewing lessons learned through hands-on projects and discussions. The afternoon session will include presentations and discussions to highlight features and benefits of various restoration programs and to review principles of site restoration.

Field Visits - AM SESSION

Solberg Wetland/Stream Creation and Restoration Project

Stephens Property

Webber Farm Wetland Restoration Project

Pratt Farm Water Management / Wetland Creation

Afternoon Session

Activity—DSU Hickory Hill Farm

Adjourn

Solberg Wetland/Stream Creation and Restoration Project

This is a unique project as the entire tax ditch right-of-way has been eliminated and portions of the tax ditch maintenance access-way have been restored to wetlands. The project altered the previously straight, narrow ditch to a wider, pooled stretch of slow-moving stream.

To further add to the natural look, a water control structure was constructed to resemble a natural beaver dam. It should also be noted that the landowner purchased two additional acres of land along the tax ditch so that the project could be completed.

The project included the following:

- Elevating the ditch bottom
- Installing three water-control structures
- Creating a man-made beaver dam
- Creating two acres of floodplain wetlands adjacent to the original channel.

Restoration Partners

- DNREC Division of Watershed Stewardship (Formerly Soil and Water Conservation)
- Kent Conservation District
- Kent County Parks and Recreation
- Private Landowners – Carl Solberg

Partners in Restoration Contact List

Dale Chuchey
Dale.Churchey@de.nacdnet.net
CREP Coordinator
Kent Conservation District

Andy Howard
andrew.howard@state.de.us
Environmental Scientist
DNREC

Matt Cardona
Matt.Cardona@state.de.us
Public Affairs Intern
DNREC

Amy Jacobs
ajacobs@tnc.org
Watershed Restoration Director
The Nature Conservancy

Thomas Crockett
thomas.crockett@state.de.us
Planner
DNREC

Matthew Jennette
Matthew.Jennette@state.de.us
Environmental Scientist
DNREC

Jason Davis
jason.davis@state.de.us
Private Lands Biologist
DNREC

Brian Jennings
brian_jennings@fws.gov
Fish and Wildlife Biologist
United States Fish and Wildlife
Service

Kevin Donnelly
Kevin.donnelly@state.de.us
District Coordinator
NCCD

Bryan Jones
bryan.jones@de.nacdnet.net
Conservation Planner
Sussex Conservation District

Partners in Restoration Contact List

Debbie Absher
debbie.absher@de.nacdnet.net
Director of Ag Programs
Sussex Conservation District

Lara Allison
lara.allison@state.de.us
Environmental Scientist
DNREC

Jayme Arthurs
Jayme.Arthurs@de.usda.gov
Program Specialist
USDA/NRCS

Tom Barthelmeh
thomas.barthelmeh@state.de.us
Program Manager II
DNREC - Watershed Stewardship

Diane Calloway
diane.calloway@state.de.us
Construction Projects Engineer
DNREC

Patricia L. Deptula
Director of Special Projects
Sussex County Engineering
Department

Mike Dryden
mdryden@tnc.org
Pocomoke Watershed Project
Coordinator
The Nature Conservancy

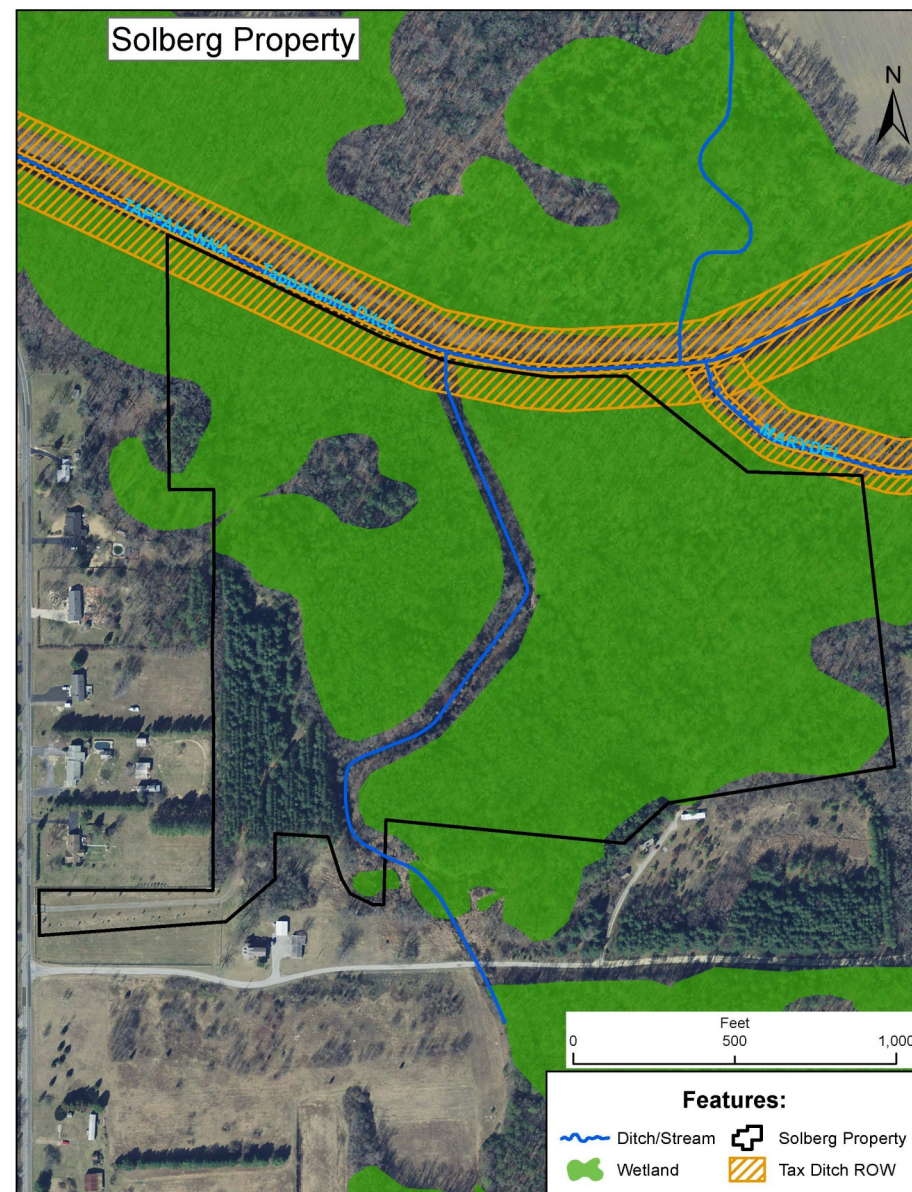
Kip Foskey
kip.foskey@de.nacdnet.net
Sr. Conservation Planner
Sussex Conservation District

Marcia Fox
Marcia.fox@state.de.us
Environmental Scientist IV
DNREC, Watershed Assessment

Matthew Grabowski
matthew.grabowski@state.de.us
Program Manager
DNREC, Drainage Program

Dan Holston
daniel.holston@de.nacdnet.net
Conservation Planner
Sussex Conservation District

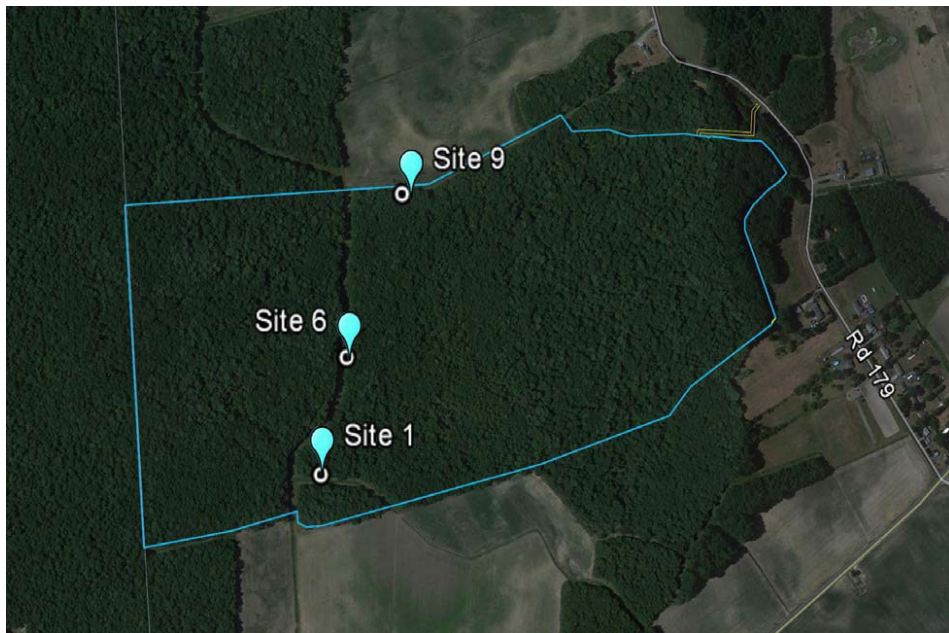
Solberg Wetland/Stream Creation and Restoration Project



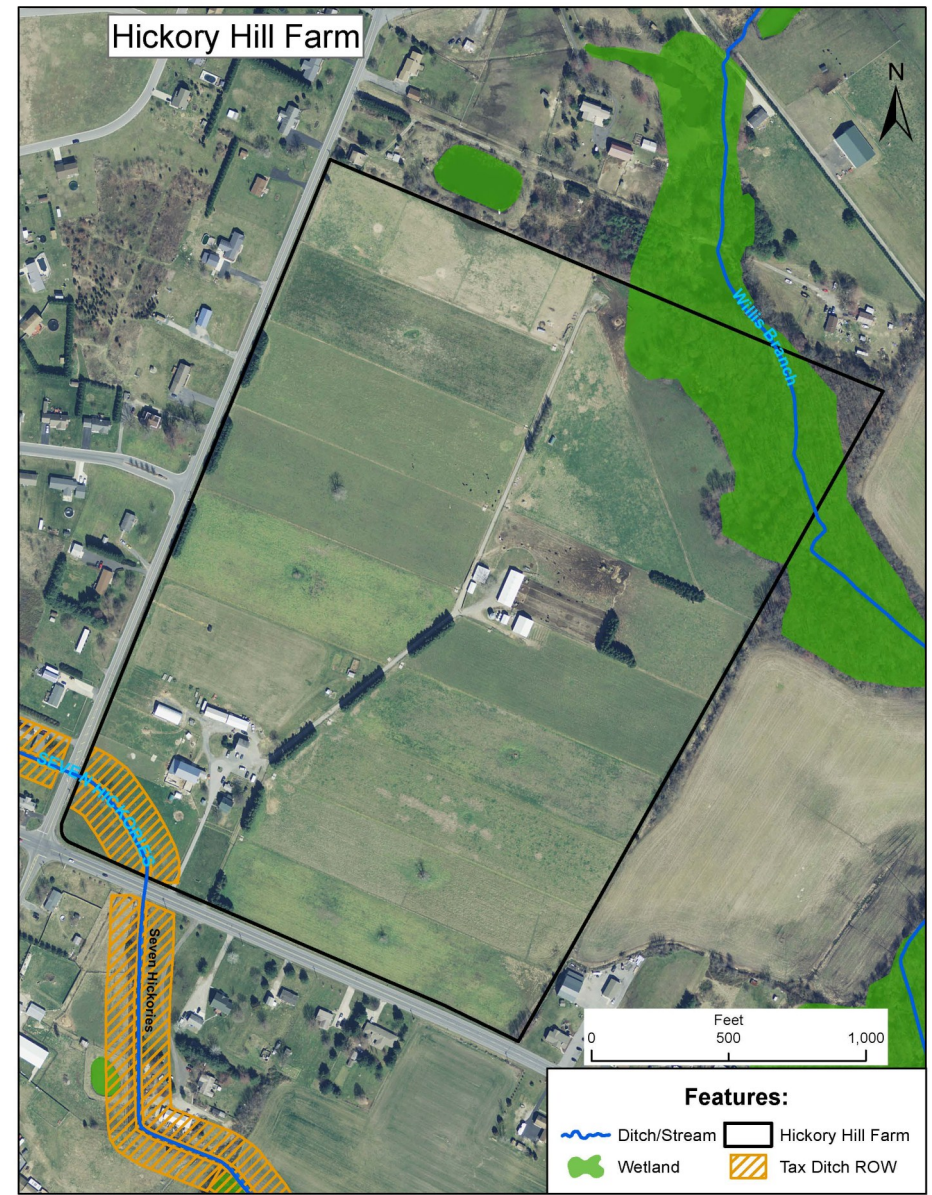
Stephens Property

Mark and Beth Stephens enrolled 163.5 acres of their woodland in the Wetland Reserve Program for a 30 Year easement in 2007. The easement was closed in September of 2010 and restoration construction commenced in July of 2011. The woodland was drained by lateral ditches and over land flow to the Harrington-Beaver Dam Tax Ditch and its prongs. Hydrology was restored with a combination of water control structures and berms where water emptied into the tax ditch.

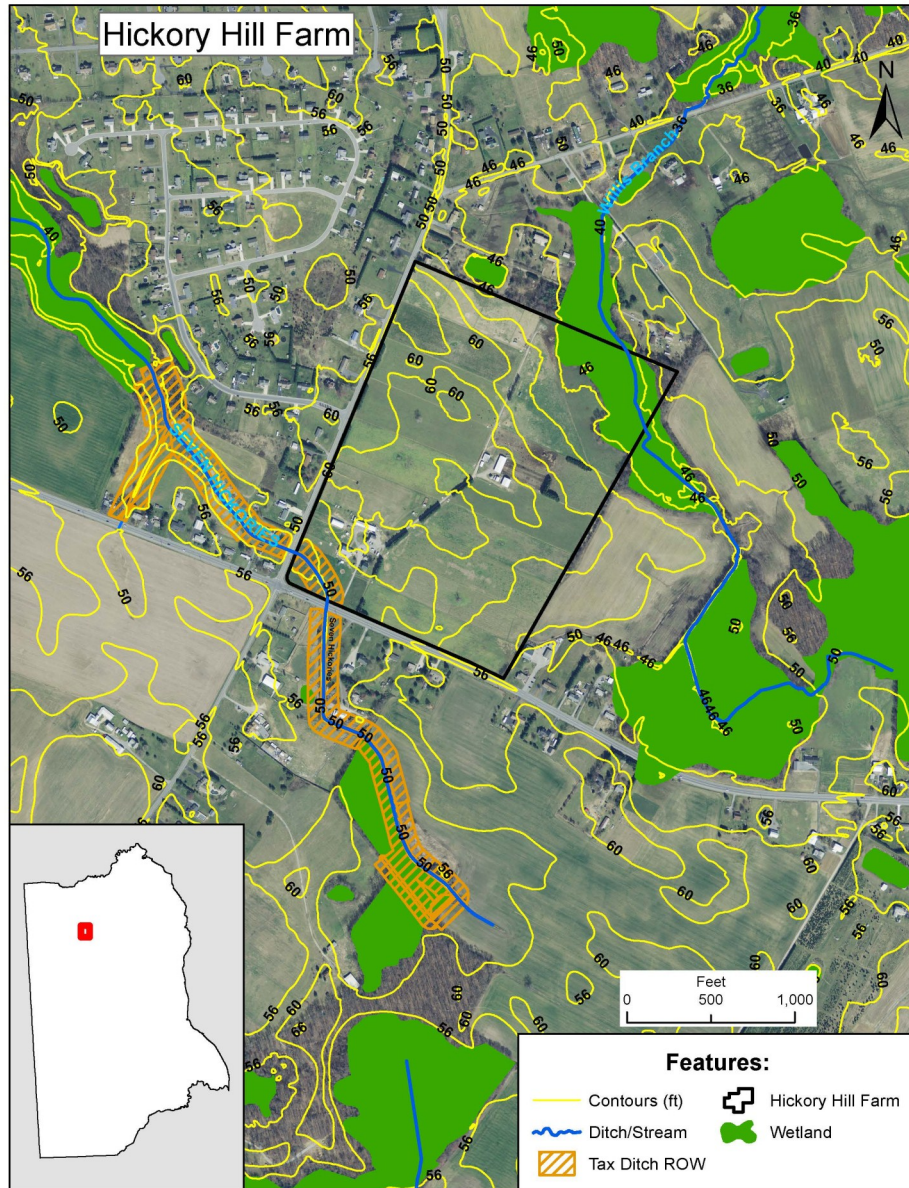
The restoration design was developed by NRCS in partnership with USFWS Chesapeake Bay Field Office and a portion of the restoration cost was paid for by the USFWS through the Delaware Bay Field Office. In July 2012 the Stephens decided to modify the easement duration and enrolled the site as a permanent easement. The site has been monitored each year since restoration construction was completed and an additional hydrology restoration practice is schedule for installation in the summer of 2014.



Afternoon Activity—DSU Hickory Hill Farm



Afternoon Activity—DSU Hickory Hill Farm

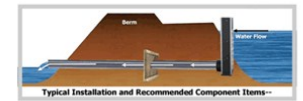


Stephens Property

Site 9



Site 1



Water Control Structure Typical Section
Diagram provided by Agridrain™

Site 6

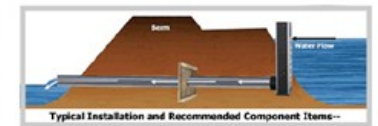


Water Control Structure Installation



Outlet Pipe Installation

WRP is most suited for poorly drained agricultural lands, where planned restoration will maximize habitat for migratory birds and other wildlife, and improve water quality.



Water Control Structure Typical Section
Diagram provided by Agridrain™



After Construction



Photo Taken After Hurricane Irene

Webber Farm Wetland Restoration Project

Notes/Sketch

The Webber Wetland Restoration Project (located southwest of Smyrna) was constructed to demonstrate methods to improve the water quality of surface water runoff from poultry production areas and adjacent agricultural fields. The plan involved constructing a wetland treatment system in an agricultural field approximately one acre in size. This project is a great example of how to improve water quality from agricultural runoff

The project included the following:

- 3 acres of wetland
- 4 water control structures
- Diversion tiles

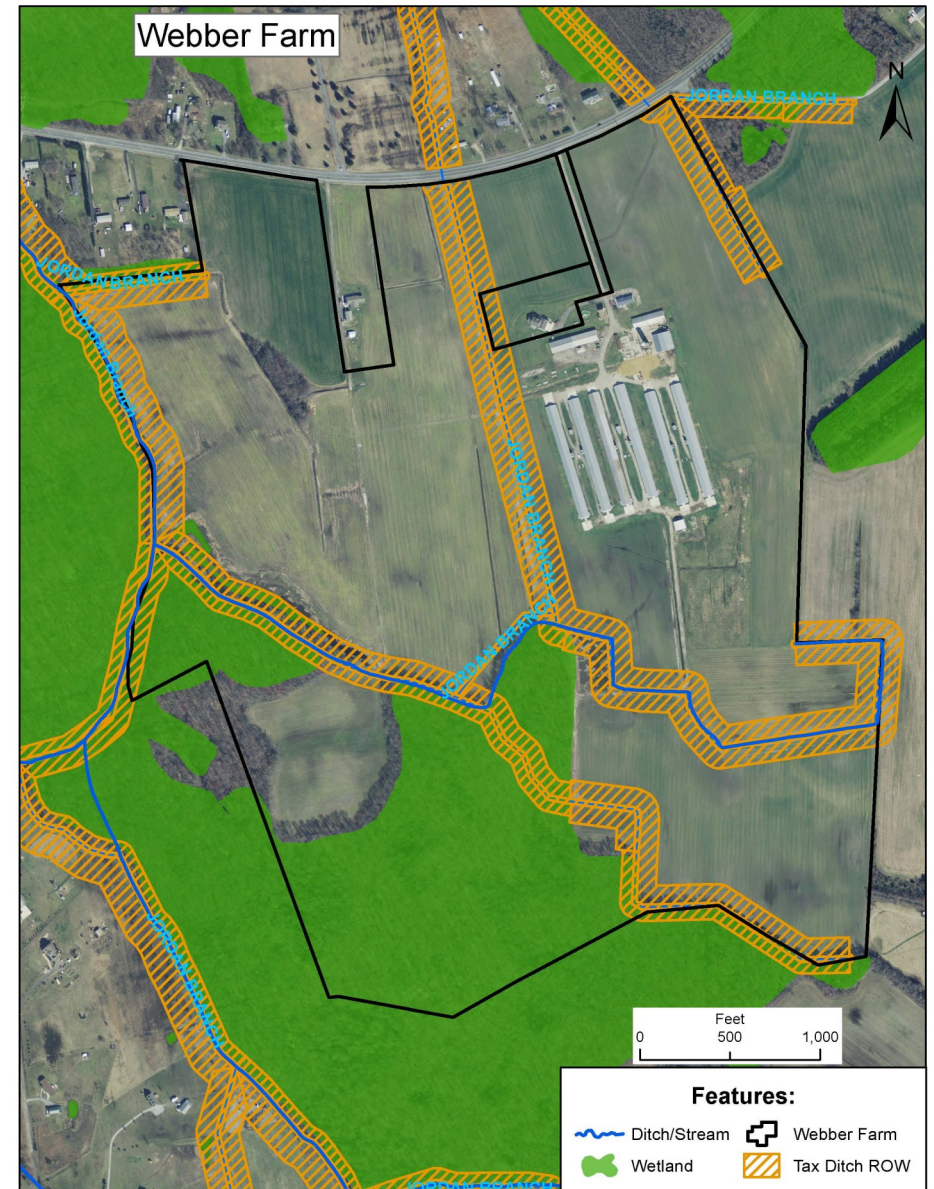
Restoration Partners:

- DNREC, Division of Watershed Stewardship (Formerly Soil and Water Conservation)
- Drainage Section
- Non-Point Source (319 Program)
- Kent Conservation District
- Smyrna High School FFA
- Private Landowners – Bill, Joyce, Matt and Bobbi Jo Webber

Site Checklist

Watershed: <i>Leipsic River</i>	Drainage Basin: <i>Delaware Bay & Estuary</i>	Date: <i>6 November 2013</i>
GPS Coordinates: Latitude: <i>39.2162</i> Longitude: <i>-75.6278</i>		
Assessed by:		
Site Description		
Name: <i>Delaware State University, Hickory Hill Farm</i>		
Address: <i>2095 Seven Hickories Road, Dover, DE 19904</i>		
<i>South of the intersection at Brenford Road and Route 42 (Seven Hickories).</i>		
Landowner Goals:		
Existing Site Conditions:		
<i>Front pasture = goat pasture with fescue field</i>		
<i>Back pasture = beef/goat pasture. Fescue & Sorghum-Sudangrass mix.</i>		
Proposed Activities		
<input type="checkbox"/> Re-establishment	<input type="checkbox"/> Enhancement	
<input type="checkbox"/> Rehabilitation	<input type="checkbox"/> Establishment	
Description:		
Soils: <i>Front pasture = FgA – Fallsington loam</i> <i>Back pasture = FgA – Fallsington loam, LhA – Lenni silt loam, WdA – Woodstown sandy loam</i>		
Evidence of poor infiltration (clays, fines)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Evidence of shallow bedrock	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Evidence of high water table (gleying, saturation)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Site Constraints		
Potential Permitting Factors:	Yes	Possible
<input type="checkbox"/> None <input type="checkbox"/> Unknown		
Impacts to Wetlands	<input type="checkbox"/>	<input type="checkbox"/>
Impacts to a Stream	<input type="checkbox"/>	<input type="checkbox"/>
Floodplain Fill	<input type="checkbox"/>	<input type="checkbox"/>
Impacts to Forests	<input type="checkbox"/>	<input type="checkbox"/>
Other Factors:		
Conflicts with Existing Land Uses/ Utilities		
<input type="checkbox"/> Sewer/Water/Gas	<input type="checkbox"/> Overhead Wires	<input type="checkbox"/> Structures
<input type="checkbox"/> Wetlands	<input type="checkbox"/> Farmed	

Webber Farm Wetland Restoration Project



Pratt Farm Water Management / Wetland Creation



Pratt Farm Water Management / Wetland Creation

The Pratt Farm, a 250 acre grain farm with a range of well drained to poorly drained soils, is located approximately two miles west of Kenton Delaware. The drainage channels on the farm were constructed during the civilian conservation corps era and have deteriorated to the point of minimal function. This decrease in function resulted in poor drainage which caused the inability to plant efficiently and often prohibits harvesting.

The intent of the project was to use created wetlands to reduce the sediment and pollutant loads to waterways while providing increased habitat; alternate drainage construction techniques focusing on the ability to maintain and protect biological communities, habitat and water quality through shading and ditch bank buffers; and demonstrate how marginal agland can be converted/restored to wetlands while enhancing adjacent agricultural lands.

The project included the following:

- Reconstruction of approximately one mile of drainage channel
- Ten acres of wetland creation/restoration
- Fifteen acres of forested wetland enhancement

Restoration Partners:

- DNREC, Division of Watershed Stewardship (Formerly Soil and Water Conservation)
- DNREC, Division of Fish and Wildlife
- Local Science Classes, FFA, and Little League
- Kent Conservation District
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- USDA Natural Resources Conservation Service
- National Marine Fisheries
- Private Landowners – John W. Pratt, Brent and Brad Smith